CLAIMS

1. A hub and braking rotor unit for the wheel of a motor vehicle, comprising:

- a rotatable hub (10) having an outwardly projecting radial flange (11) defining an outwardly facing edge (12),

- a braking rotor (20) which is integral with or fixed for rotation with a flange (21, 41) which projects radially inwards and which defines an opening (23, 43) with an internal edge (22, 42), where the edges (12 and 22, 42) of the two flanges (11 and 21, 41) are adjacent to each other and face each other radially,

characterized in that the edges (12 and 22, 42) have, at least along one portion thereof, the same non-circular shape in the same radial plane in order to enable the braking torque to be transmitted from the braking rotor (20) to the hub (10).

2. A unit according to claim 1, characterized in that the edges (12 and 22, 42) of the two flanges (11 and 21, 41) have a same generally oval or elliptical shape.

3. A unit according to claim 1 or 2, characterized in that the edges (12 and 22, 42) of the two flanges (11 and 21, 41) have substantially congruent profiles viewed in the axial direction.

4. A unit according to any one of the preceding claims, characterized in that the two flanges (11) and (21, 41) are substantially aligned in the same radial plane.

5. A unit according to any one of the preceding claims, wherein the braking rotor (20) is mounted directly on the flange (11) of the hub (10), characterized in that the flange (21) projecting radially inwards is formed integrally by the braking rotor (20).

6. A unit according to any one of claims 1 to 4, characterized in that the braking rotor (20) is mounted on the flange (11) of the hub (10) by the interposition of an annular support member (40) fixed for rotation with the braking rotor (20) and forming the flange (41) which projects radially inwards and which defines the opening (43) with the internal edge (42).

7. A unit according to claim 6, characterized
in that the annular support member (40) forms a radial flange which projects outwards and which defines an external edge (42a),
in that the braking rotor (20) has a flange which projects radially inwards and which defines an opening (23) with an internal edge (22), where the projecting radial flange of the annular support member is inserted in the opening (23) of the braking rotor (20), and the edges (22 and 42a) of the two above-mentioned flanges are adjacent to each other and face each other in the radial direction, and
in that the edges (22 and 42a) have, at least along one portion thereof, the same non-circular shape in the same radial plane in order to enable the braking torque to be transmitted from the braking rotor (20) to the support member (40).

8. A unit according to claim 1, characterized in that the outwardly facing edge (12) is formed at least in part by the external edge of an axially thickened portion (19) formed on a face (11a) of the flange (11) of the hub (10).

9. A unit according to claim 8, characterized in that the edge (12) is formed at least in part by a plurality of axially thickened formations (18) which extend radially on a face (11a) of the flange (11) of the hub (10).

10. A unit according to any one of claims 6 to 9, characterized in that the annular support member (40) forms a pair of flanges (41, 41a) which project radially inwards and which extend on opposite faces of the flange (11) of the hub, and in that at least one of the two flanges forms an internal edge (42) which faces radially an outwardly facing edge (12) formed by an axially thickened portion (19) on a face (11a) of the flange (11) of the hub (10).

11. A unit according to any one of claims 6 to 10, characterized in that the annular support member (40) is formed by joining at least two complementary curved portions (40a, 40b) which are joined securely to each other (44) to form a closed ring around the external edge (12) of the hub.

12. A unit according to any one of claims 6 to 10, characterized in that the annular support member (40) is formed by joining two rings (40c, 40d) of bent sheet-metal which are joined securely to each other along a circumference (45) to form a closed ring around the external edge (12) of the hub.

13. A unit according to any one of the preceding claims, characterized in that radial clearance is provided between the facing edges (12 and 22, 42) of the two flanges (11 and 21, 41).

14. A unit according to any one of the preceding claims, characterized in that it also comprises retaining means (30) suitable for blocking or limiting relative axial movements

between any two of the components (10, 20, 40) constituting the unit.